

Please tick appropriate boxes:

- ☐ I am interested in the PLUTO project starting in 2009
- ☐ I would like support in other areas in science learning and engagement.

(Please FAX or send this form to Simon or Paul)

Name:

School:

Email:

Contact Ph/Mb:

The areas I am interested in are (tick):

- ☐ PLUTO
- ☐ NZC
- ☐ Ka Hikitia

More specifically:

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A good time to contact me is:

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Any other questions?

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Vision

Quality learning through partnerships
Nāu te rourou, nāku te rourou ka ora te iwi

Mission

Growing and enhancing learning, through
formal and informal professional
learning opportunities



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

SCIENCE

**THE
PLUTO
PROJECT**
Please Let Us Take Off!



Professional Learning Programme 2009-2010
Secondary Science Teachers and Educators



Raising student engagement and achievement
in science



Improving students' attitudes and perceptions to
science and raising Maori students' engagement
with science experiences at secondary school



Equipped with his five senses, man explores the universe around him
and calls the adventure 'Science'

(Edwin Powell Hubble, The Nature of Science, 1954)

THE PLUTO PROJECT

Please Let Us Take Off!

A major focus for professional learning in schools (facilitated by the Science Adviser) is the use of student voice to aid the shifts in teaching practice. Student voice has activated and stimulated discussion in science faculties to act as a mechanism to make changes in the learning environment - hence the name

"PLUTO" Please Let Us Take Off!

2007 NZ curriculum focuses on learners at the centre of the learning process. Schools and faculty departments have the flexibility to actively involve students in what they learn, how it is taught, and how the learning is assessed. This model of learning encompasses generic skills and competencies like thinking, working together collaboratively in teams and being future orientated.

Engagement and Achievement - in Science

Another significant element to the proposed project is to raise Maori students' engagement with their first and on going science experiences at secondary school and their overall achievement
continued ↗

at year 9 and 10. In the Waikato, BOP region, there is a proportion of Maori students in most junior science classes. Teachers observe that some Maori students remain disengaged in science activities and their overall attitude to Science learning is concerning.

The focus would be at the year 9 cohort initially and would shift to year 10 later. The principles of the Te Kotahitanga effective teaching profile would be used as an opportunity to discuss the elements of Manaakitanga, Mana Motuhake, Whakapiringatanga, Wananga and Ako. These themes would support the project in their opportunities to raise Maori engagement and achievement in an effective learning environment.

It is this model of student learning and teaching that this proposed project is interested in exploring, with particular reference to science education of years 9 and 10 at secondary schools. The emphasis of key competencies in the curriculum point out that students in the 21st Century are required to make informed decisions and have the ability to apply their knowledge and relate it to familiar and unfamiliar situations.

*When we try to pick out anything by itself,
we find it is tied to everything
else in the universe.*

(John Muir 1838-1914 US Naturalist, Explorer)

The Initiative would:

- Target 5-6 secondary schools in the regions of the Waikato and Bay of Plenty. Selection of one Year 9 science class from each school. The class would be of mixed ability students, having basic numeracy and literacy skills at level 4 or higher.
- Liaise with the Secondary School Support Services team. The Science, EFS, Technology, Arts, Languages, Numeracy, Literacy, Te Kotahitanga and GATE advisers, who would take a supportive role with the schools.
- Implement a quality professional learning programme with the associated teachers.
- Select one mixed ability year 9 science class from each school and their teacher to undertake a 3 year professional development programme.
- Facilitate workshops in 2009 to provide an opportunity for the teachers to create a shared understanding of their vision for the programme and towards the NZC (2007).
- Explore and develop strategies such as COLA Cooperative Learning and Assessment, Inquiry learning and PROBLIT, in each class. Students working in teams, learning and using appropriate contexts, and facilitated with the teachers and corresponding science faculties.
- Require the laboratory to have digital access to the internet. A minimum of four to five computers in the room would be an important aspect of knowledge gathering. Access to a science laboratory for most of the science contact time would be a requirement. There would be an emphasis on practical activities and a creative long term investigation, and hence the need for the usual physical laboratory conditions.
- Support and form a professional cross-curricular learning community and share a common vision.

